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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,700	02/13/2002	Stephen J. Mattingly	97012/07CIP	8082

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EXAMINER	
TATE, CHRISTOPHER ROBIN	
ART UNIT	PAPER NUMBER
1654	

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,700	MATTINGLY ET AL.	
	Examiner	Art Unit	
	Christopher R. Tate	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed is acknowledged and has been entered. Claims 35-59 have been examined on the merits.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 U.S.C. § 112

With respect to the elected invention, new claims 35-59 are rejected under 35 U.S.C. 112, first paragraph for some of the reasons set forth in the previous Office action which are restated below.

The specification, while being enabling for a method of controlling fire ants using a composition comprising an effective amount of the demonstrated strain of *Rhodobacter capsulatus*, does not reasonably provide enablement for controlling any and all insect populations using a composition comprising any and all subspecies strains of *Rhodobacter capsulatus* (dead or alive); nor for using an extract thereof, as instantly claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

With respect to the elected invention, Applicants have reasonably demonstrated that a composition comprising an effective amount of a particular strain of *Rhodobacter capsulatus* has insecticidal activity against fire ants. As noted in parent Application No. 09/951,833, the state of the art recognizes that particular gram-negative bacterial strains - i.e., a particular ATCC strain of *Serratia marcescens* (ATCC 17999, previously known as *Serratia piscatorum*) and a particular strain of *Enterobacter cloacae* (ATCC 15337, previously known as *Aerobacter aerogenes*) have insecticidal activity, as do genetically altered gram-negative bacteria, especially

those containing one or more *Bacillus thuringiensis* (*Bt*) toxin genes (see, e.g., art rejections of record set forth in parent Application 09/951,833). However, the claims broadly encompass a method of controlling any and all insect populations using a composition comprising any and all subspecies strains of the gram-negative bacterial species *Rhodobacter capsulatus*, or an extract thereof, which is clearly beyond the scope of the instant disclosure. Since the vast majority of prior art microbial insecticidal compositions, including those against ants such as fire ants, are comprised of fungi or gram-positive bacteria (e.g., *Bt)* or, alternatively, comprised of genetically altered gram-negative bacteria (e.g., one which contains *Bt* genes), those skilled in the art are unlikely to accept the data as being correlatable to the broadly claimed insecticidal method which encompasses the use of any and all subspecies strains of *Rhodobacter capsulatus* instantly claimed (e.g., non-genetically altered strains), as well as extracts derived from non-viable, ruptured, dehydrated bacterial material thereof.

Accordingly, with respect to the elected invention, others skilled in the art would be unable to practice the invention as claimed without undue experimentation and with a reasonable expectation of success, other than using a composition for controlling fire ants comprising an effective amount of the particular demonstrated *Rhodobacter capsulatus* strain (as shown, e.g., in instant Examples 6 and 7) - in a viable or non-viable state (however, not to compositions comprising extracts derived from non-viable, ruptured, dehydrated bacterial material thereof).

Applicants' arguments have been carefully considered but are not deemed to be persuasive of error in the above rejection. Applicants argue that all of the species within Rhodobacter have sufficient similarity that the cellular components that induce death in fire ants will remain the same. However, this assumption by Applicants is not scientifically valid as it is

well known in the Microbiology art that various subspecies strains within a given bacterial genus typically display a vast array of unpredictable phenotypic characteristics. Further (as discussed above), with respect to the elected invention, only one particular strain within *Rhodobacter capsulatus* has been demonstrated as providing activity against fire ants. Accordingly, for the reasons set forth above, others skilled in the art would be unable to practice the elected invention as claimed without undue experimentation and with a reasonable expectation of success, other than using a composition for controlling fire ants comprising an effective amount of the particular demonstrated *Rhodobacter capsulatus* strain (as shown, e.g., in instant Examples 6 and 7) - in a viable or non-viable state (however, not to compositions comprising extracts derived from non-viable, ruptured, dehydrated bacterial material thereof).

With respect to the elected invention, claims 35-59 are also rejected under U.S.C. 112, first paragraph for the reasons set forth in the previous Office action which are restated below.

The claimed invention is not deemed enabled without **complete evidence either that the claimed biological material (i.e., the particular demonstrated *Rhodobacter capsulatus* strain shown in instant Examples 6 and 7) is known and readily available to the public or complete evidence of the deposit of the biological material**.

It is apparent that the demonstrated microorganism is required to practice the elected claimed invention. As a required element it/they must be known and readily available to the public or obtainable by a repeatable method set forth in the specification. If they are not so obtainable or available, the enablement requirements of 35 U.S.C. § 112, first paragraph, may be satisfied by a deposit of the microorganisms. See 37 C.F.R. § 1.802.

The specification does not provide a repeatable process for obtaining the demonstrated microorganism and it is not apparent if the microorganisms are readily available to the public. The specification must contain the date that the microorganism was deposited, the name of the microorganism and the address of where the microorganism were deposited.

If the deposit has been made under the terms of the Budapest Treaty, then an affidavit or declaration by Applicants or someone associated with the patent owner who is in a position to make such assurances, or a statement by an attorney or record over his/her signature, and registration number, stating that the specific strain(s) has/have been deposited under the Budapest Treaty and that all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon the granting of a patent, would satisfy the deposit requirements. See 37 C.F.R. § 1.808.

If the deposit has not been made under the Budapest Treaty, then in order to certify that the deposits meet the criteria set forth in 37 C.F.R. § 1.801-1.809, Applicant(s) may provide assurance of compliance by an affidavit or declaration, or by a statement by an Attorney of record over his/her signature and registration number, showing that:

(a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;

(b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

c) the deposit(s) will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;

(d) a viability statement in accordance with the provisions of 37 C.F.R. § 1.807; and

(e) the deposit will be replaced should it become necessary due to inviability, contamination or loss of capability to function in the manner described in the specification.

In addition, the identifying information set forth in 37 C.F.R. § 1.809 (d) should be added to the specification. See 37 C.F.R. § 1.803-1.809 for additional explanation of these requirements.

Applicants' state that they will submit a viable culture to a depository if allowable subject matter matures from this application. Accordingly, the above rejection stands until such biological deposit has actually been made.

Claims 51-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 51 is rendered vague and indefinite by the phrase "an extract of a *Rhodobacter capsulatus* bacteria, where the extract is derived from non-viable, ruptured, dehydrated bacterial material" (lines 2-3) because the metes and bounds of the term "extract" therein are not clearly nor adequately delineated - e.g., other than reciting that the extract is "derived" from non-viable, ruptured, dehydrated bacterial material, it is totally unclear as to what is contemplated by the term "extract" within this phrase - i.e., what is the actual "extract" (a piece of cell wall, a fatty acid from the cell membrane, a nucleic acid fragment, cytoplasm, a protein, an organic compound, a crude extract obtained via solvent extraction)? Since the bacterial extract within this claim is clearly an essential element of the claimed invention, this element ("extract") must be fully and adequately defined within the claim language itself. Claim 51 (and dependent claims therefrom) fail to adequately define this essential element (and, further, the specification

fails to adequately teach what such an "extract" actually defines/encompasses - please note that no new matter may be introduced into the specification in response to this Office action). To hasten prosecution, it is strongly suggested that claims 51-58 be canceled in response to this Office action.

All other claims depend directly or indirectly from rejected claims and are, therefore, also rejected under U.S.C. 112, second paragraph for the reasons set forth above.

Claim Rejections - 35 U.S.C. § 102

Claims 35, 37-39, 41-45, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Jong et al. (KR 9411524 - DWPI Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

Jong et al. teach a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes a carbohydrate and/or humus (please not that humus is dead plant material and, thus, would inherently contain cellulostic material therein since cellulostic material such as cellulose is defined as an "amorphous carbohydrate polymer ($C_6H_{10}O_5$), the main constituent of all plant tissues and fibers" (Webster's Dictionary, 1988) - see DWPI Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 35, 37-39, 41-45, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (JP 05247378 - CAPLUS Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

Kobayashi teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes cellulose (a carbohydrate polymer) - see CAPLUS Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 35, 37-39, 41, 42-45, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Nippon Life KK (JP 60027672 - DWPI Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

Nippon Life KK teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter*

capsulatus - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes various carbohydrate-containing ingredients including rice bran which would inherently comprise cellulostic material (e.g., cellulose - a carbohydrate polymer) - see DWPI Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 35-39, 41-48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda (JP 05304959 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

Matsuda teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) in an amount of 10^6-10^{10}/g as an active ingredient therein, whereby the composition further comprises a bacterial culture solution (which would inherently contain at least one carbohydrate therein) - see JPAB Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 35, 37-39, 41, 42-45, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (JP 09238681 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

Kobayashi et al. teach a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further a seaweed polysaccharide (carbohydrate) - see JPAB Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 35-39, 41-48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

The ATCC Catalogue teaches compositions comprising pure cultures (thus, apparently within the claimed amount ranges) of *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus;* however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and

Rhodopseudomonas capsulatus), whereby the composition further comprises a concentrated growth medium (which would inherently contain at least one carbohydrate therein) as well as double strength skim milk (which also inherently contains carbohydrates therein such as lactose) - see, e.g., pages vi, 269, 275, 542 and 543 . Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claim Rejections - 35 U.S.C. § 103

Claims 35-39, 41-48, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jong et al. (KR 9411524 - DWPI Abstract), Kobayashi (JP 05247378 - CAPLUS Abstract), Nippon Life KK (JP 60027672 - DWPI Abstract), Matsuda (JP 05304959 - JPAB Abstract), or Kobayashi et al. (JP 09238681 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992); or over the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992) for the reasons set forth in the previous Office action which are restated below.

The references are relied upon for the reasons set forth above.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a composition (such as any one of those disclosed by the cited references) comprising a result-effective amount of *Rhodobacter capsulatus* (*Rhodopseudomonas capsulatus*), especially since each of the cited references beneficially teach that this bacterial species is an active ingredient (and/or pure culture) therein. Accordingly, the adjustment of this particular conventional working conditions as well as other conventional working conditions (e.g., further including and/or substituting a commonly-employed, readily-

available cellulostic carbohydrate source within such compositions), is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

Thus, the invention as a whole is *prima facie* obvious over one or more of the cited references, especially in the absence of evidence to the contrary.

Applicants' arguments concerning the above art rejections have been carefully considered but are not deemed to be persuasive of error in the rejections. Applicants argue that the art references do not teach that their compositions are lethal to animal life (insects) to which it is fed. However, as discussed in the previous Office action, with respect to the U.S.C. 102 and 103 rejections above, it is noted that the cited references do not teach that the composition can be used in the manner instantly claimed - however, the intended use of the claimed composition does not patentably distinguish the composition, per se, since such undisclosed use is inherent in the reference compositions. In order to be limiting, the intended use must create a structural difference between the claimed composition and the prior art compositions. In the instant case, the intended use does not create a structural difference, thus the intended use is not limiting. Please note that when applicant claims a composition in terms of function and the composition of the prior art appears to be the same, the Examiner may make a rejection under both 35 U.S.C. 102 and 103 (MPEP 2112). Applicants further argue that the cited references do not teach an insect food. However, as discussed above, the ingredients disclosed therein (including carbohydrates, etc.) would be suitable for ingestion by insects and, thus, read upon "insect food" - i.e., nothing would preclude the additional ingredient(s) disclosed by the cited references from being used as "insect food".

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

No claim is allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Tate whose telephone number is (571) 272-0970. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached at (571) 272-0961.

Christopher R. Tate
Primary Examiner, Group 1654